January 2004

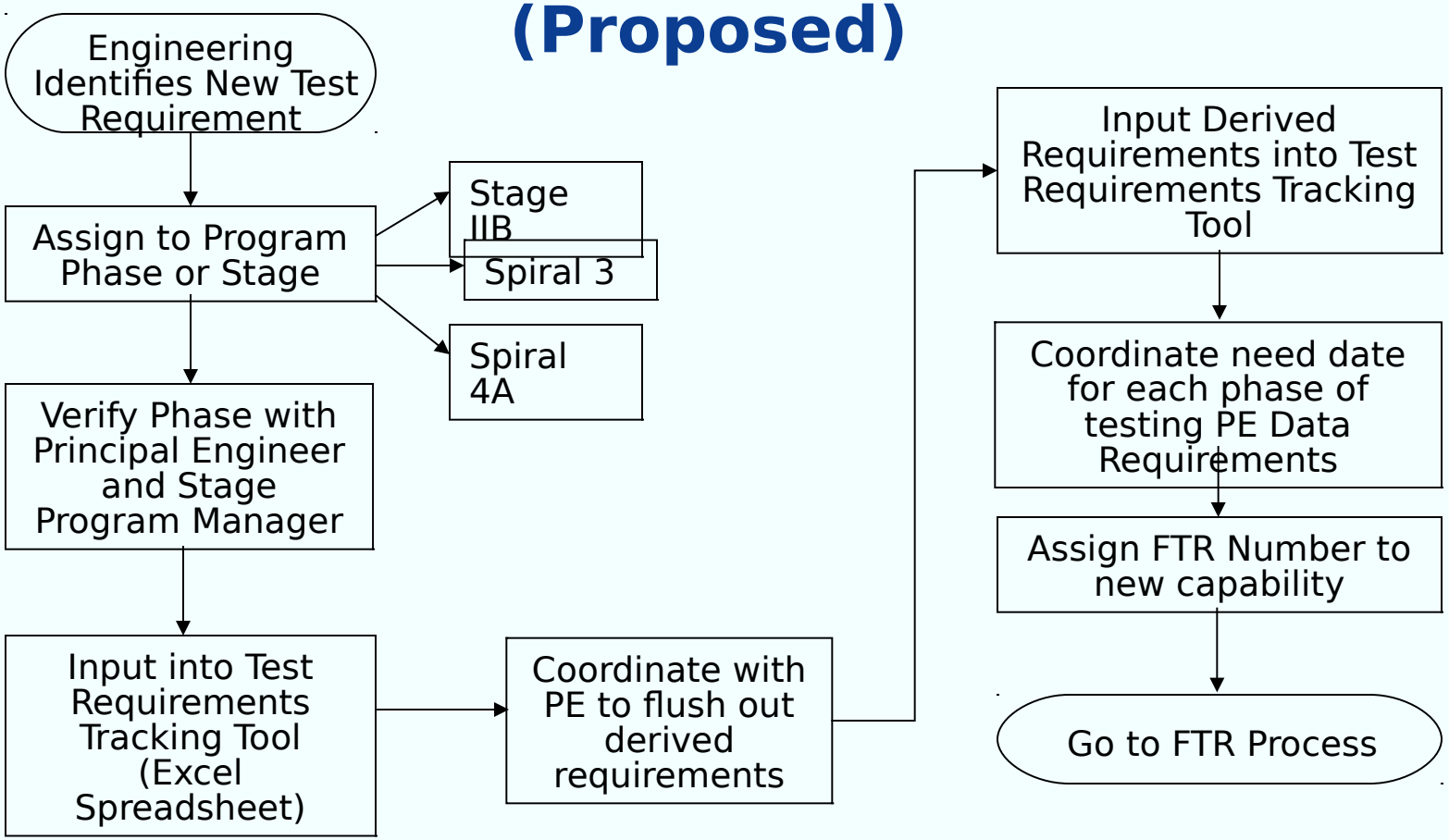
Test Requirements Validation & Flight Test Requests

Erik Jensen
Test Requirements, Planning and Scheduling

Overview

- **Test Requirements Responsibilities**
  - Liaison with Product Development (Engineering) to identify all test requirements prior to production cut-in
  - Validate Test Requirements
  - Assist Engineering with Test Planning Process at EAFB
  - Ensure Requirements and Verification are Managed in a Timely Manner

Test Requirements Validation Process (Proposed)


Engineering Identifies New Test Requirement
Assign to Program Phase or Stage
Stage IIB
Spiral 3
Spiral 4A
Verify Phase with Principal Engineer and Stage Program Manager
Input into Test Requirements Tracking Tool (Excel Spreadsheet)
Coordinate with PE to flush out derived requirements
Input Derived Requirements into Test Requirements Tracking Tool
Coordinate need date for each phase of testing PE Data Requirements
Assign FTR Number to new capability
Go to FTR Process

Test Requirements Tracking Tool (TRTT)

EMD Stage IIB Test Requirements									
New Capabilities	Responsible Engineer	Spiral	Lot Cut-in	Requirements Origination Document	Document Number	ROIN	Requirements Text	ETM # or FTR #	Test Objectives
Power Upgrade (25KVa)	Lazarevic / Cleek	2	3/4	AVS	41_1357	25-120	The Global Hawk System's Air Vehicle Segment shall provide an on-board AC electrical power generation of 25 kVA. Verify the electrical power interface functions properly (IMMC/PDC to AC PDA).		
Power Upgrade (25KVa)	Lazarevic / Cleek	2	3/4	AVS	41_1357	25-121	The Global Hawk System's Air Vehicle Segment shall provide an on-board DC electrical power generation capability of 400 Amps. Verify AC Power System operation while powered from External 400 Hz Power.		
Power Upgrade (25KVa)	Lazarevic / Cleek	2	3/4	AVS		N/A	Derived Requirement	11-003AL1	Verify Fault/Failure Modes
Power Upgrade (25KVa)	Lazarevic / Cleek	2	3/4	AVS		N/A	Derived Requirement	11-003AL1	Verify ATP on EPS
Power Upgrade (25KVa)	Lazarevic / Cleek	2	3/4	AVS		N/A	Derived Requirement	11-003AL1	Verify overall EPS System operation and performance, including power transfers and power quality. Test failure modes to a certain extent and verify automatic system response/reconfiguration (turn off 25 kVA Generator, 10 kVA Generator...).

Test Requirements Tracking Tool (TRTT)
(Slide 2 of 2)

Systems Center Testing Date Current IMS Schedule # IMS Line Item Number					Static Ground Testing			Dynamic Ground & Flight Testing			
CLS	HB	SW	SIL MCE	Data Need Date	MX Engine Run	SOF Engine Run	Data Need Date	Taxi Testing	Takeoff Abort	Flight Testing	Data Need Date
12/1/2003											
12/1/2003											
12/1/2003											
					7/1/2004						

Flight Test Request Process (Proposed Revision)

FTR Number Assigned

PE Coordinates
- Define Test Requirements
- Establishes Test Data Need Date
- Eng / Dwg release dates

Principal Engineer drafts FTR based on defined test requirements

FTR TIM (Flt Test IPT, CTF, & SPO Engineering Review FTR)

A

A

FTR Data Adequate ?

NO

Yes

IPT Lead Signs FTR & Forwards to Chief Engineer for Approval

Ch. Eng. Reviews & Signs FTR online & notifies Flt Test Liaison

Flight Test Liaison signs FTR on line and notifies Ops Test Engineers at EAFB of New Open FTR

B

B

EAFB Ops Engineers write TIS based on Approved/Opened FTR

EAFB CTF Develops Test Documentation and conducts testing
(*4-7 Week Process)

Flight Test Liaison coordinates with PE as to when all data is captured

Test Complete / FTR Closed /CTF Notified